

Multi-Component Sensor M-2416 with Rated Force/Torque of 20 N/0.1 N·m and 50 N/0.5 N·m



Data sheet



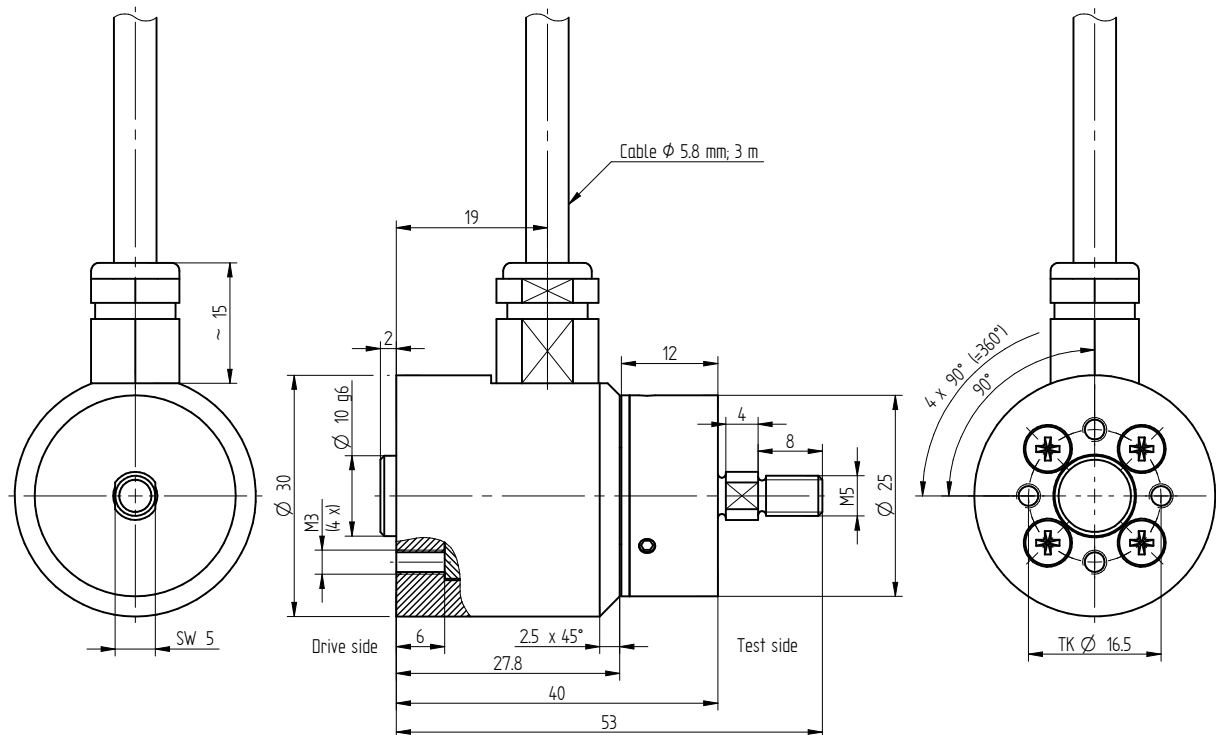
Performance Features

- Reaction torque/force sensor, non-rotating, e.g. for optimization of the granulation of abrasives
- TEDS (Transducer Electronic Data Sheet) Standard IEEE 1451.4 (optional)
- Very short axial length
- Reliable and durable
- Simple handling and assembly
- Special versions on request

Application

- Assembly technology
- Process measuring and control technology
- Automotive industry
- Measuring and control devices
- Tool engineering
- Special mechanical engineering

Dimensions in mm



Rated Force/Torque [N/N·m]	Weight [kg]
20/0.1	0.3
50/0.5	0.3

Connection Assignment

Electrical Connection

Excitation (-) torque	Blue	●
Excitation (+) torque	Red	●
Signal (+) torque	Pink	●
Signal (-) torque	Gray	●
Control signal torque or TEDS (option)	Violet	●
Excitation (-) force	Green	●
Excitation (+) force	Brown	●
Signal (+) force	Yellow	●
Signal (-) force	White	○
Control signal force or TEDS (option)	Black	●
Shielding	Shield	⊕

Technical Data acc. to VDI/VDE/DKD 2638 and VDI/VDE/DKD 2639

Multi-Component Sensor M-2416

Rated force F_{nom} /Rated torque M_{nom}	N/N·m	20/0.1	50/0.5
Accuracy class force	% F _{nom}	0.2	
Accuracy class torque	% M _{nom}	0.2	
Cross talk	% F/M _{nom}	<1	
Relative repeatability error in unchanged mounting position b'	% F/M _{nom}	±0.1	
Rated range of excitation voltage B_{U, nom}	VDC	2 ... 8	
Bridge resistance R_{Br} (torque)	Ω	350	
Input/output resistance R_e/R_a (force)	Ω	350	
Rated characteristic value C_{nom}	mV/V	0.5 ±0.1 %	
Electrical connection		Cable, 3 m with free strands	
Reference temperature T_{ref}	°C	23	
Rated temperature range B_{T, nom}	°C	-5 ... 45	
Operating temperature range B_{T, G}	°C	-15 ... 55	
Storage temperature range B_{T, S}	°C	-30 ... 95	
Temperature effect on zero signal TK₀	% F/M _{nom} /10 K	±0.4	
Temperature effect on characteristic value TK_C	% F/M _{nom} /10 K	±0.2	
Operating load (static)	% F/M _{nom}	130	
Limit load (static)	% F/M _{nom}	150	
Breaking load (static)	% F/M _{nom}	>500	
Rated displacement S_{nom}	mm	<0.1	
Twisting angle at rated load	°	<0.2	
Permissible oscillation stress	% F/M _{nom}	70 (peak-to-peak)	
Material		Aluminum	Stainless steel
Level of protection		IP50	

Article-No.	Rated Force/Torque [N/N·m]	Spring Rate [N·m/rad]	Mass Moment of Inertia [kg·m²]		Lateral Force Limit [N]
			Drive Side	Test Side	
105492	20/0.1	2.8E+01	4.9E-06	1.2E-06	0.8
108175	50/0.5	1.5E+02	5.3E-06	3.4E-06	2.3

Options

Article-No.	Description	
100218	Control signal	100 % F/M _{nom}
100739	Control signal	80 % M _{nom}
106154	Control signal	50 % M _{nom}
113134	TEDS-standard IEEE 1451.4	

Calibrations for Torque

Article-No.	Description	
400676	Linearity diagram in accordance to factory standard	25 % steps
400664	Linearity diagram in accordance to factory standard	10 % steps
400961	Proprietary calibration acc. to VDI/VDE 2646	3 steps
400700	Proprietary calibration acc. to VDI/VDE 2646	5 steps
400688	Proprietary calibration acc. to VDI/VDE 2646	8 steps
	DAkKS-Calibration/Standard on request	

Calibrations for Force

Article-No.	Description	
400628	Linearity diagram in accordance to factory standard	25 % steps
400170	Linearity diagram in accordance to factory standard	10 % steps
400960	Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3	3 steps
400652	Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3	5 steps
400640	Proprietary calibration acc. to DIN EN ISO 376 and DAkkS-DKD-R 3-3	8 steps
	DAkkS-Calibration/Standard on request	

Accessories

Electrical Connection

Article-No.	Description
10488	Cable connector KS12 (12-pin series 581) incl. sensor mounting
10320	Cable connector KSSH15 (15-pin) incl. sensor mounting
43418	Input connector ZA9612FS (ALMEMO) incl. sensor mounting and connector calibration
49205	Input connector ZKD712FS (ALMEMO 202) incl. sensor mounting and connector calibration

Amplifiers

Examples of suitable amplifiers for the multi-component sensor M-2416:

LCV	Gm 78	GM 40	GM 80	SI
				

Further suitable amplifiers you can find on our homepage under <https://www.lorenz-messtechnik.de/english/products/>